UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/895,768	CHU ET AL.
	Examiner	Art Unit	
	Jin-Cheng Wang	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 19-29* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15 and 19-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's submission dated 6/27/2006 has been entered. Claims 1-2 and 19 have been amended. Claims 16-18 have been canceled. Claims 1-15, and 19-29 are pending in the present application.

Response to Arguments

Applicant's arguments filed 6/27/2006 are moot in view of the new ground of rejection set forth in the present Office Action.

This rejection is made final due to applicant's amendment, e.g., "each frame" set forth in line 3 of the claim 1 is now amended to read "each full frame". The "full frames" set forth in the line 4 of the claim 1 is amended to read "the full frames". The "each full frame" in line 5 of the claim 1 is amended to read "said full frames." As addressed below, this amendment is subject to rejection under 35 U.S.C. 112. Moreover, this rejection under 35 U.S.C. 112 alone is sufficient to have made the Office Action final.

Claims 1-2, 3-11, 12-15, 19 and 21-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

For example, the base claim 1 recites "each full frame", "rendering of full frames", "display of the full frames". However, both applicant's specification and claim have not

particularly point out the INPUT image frames to and the OUTPUT image frames from any of the steps for the rendering, interpolating and blending steps. It should be noted that the <u>animated</u> full frames are different from the (original) full frames before animation. However, when the keyword "animated" is omitted from "the animated full frames", the sentence does not make sense at all.

While "rendering of full frames" in the line 2 of the claim 1 or "resizing of full frames" in line 5 of the claim 1 refers to rendering the full frames as outputs, i.e., each of the full frames as rendered has a whole number of multiple of a digital video resolution value and a whole number multiple of a temporal resolution value. "Each full frame" in the line 3 of the claim 1 refers to the full frame as input to the rendering step because each full frame only has a digital video resolution value less than the digital video resolution value of "full frames" (after being rendered) set forth in "rendering of full frames". "Display of the full frames" refers to the full frames as input to the rendering step because these full frames are displayed having a temporal resolution value less than the full frames (after being rendered) set forth in "rendering of full frames". Moreover, "resizing said full frames" in line 5 of the claim 1 may refer to the full frames as input to the rendering step, which thus is not described in the specification.

Finally, applicant's specification in Page 4 describes the capability of ADOBE After Effects for performing the steps set forth in the claim invention. Therefore, Adobe After Effects is cited in this Office Action. It is concluded that Adobe After Effects has taught the claim invention.

Moreover, ON PAGE 5 of Applicant's specification, it is stated, "the method is advantageous because it is straightforward to implement with commercial software currently available and produces high quality video."

Applicant has used commercial software to come up with the claim invention, at least the specification in Pages 1-5 preceding the above-quoted passage. Because commercial software constitutes the prior art, the commercial software has taught the applicant's claim invention as Applicant admitted of implementing it to arrive at the method (the claimed invention) and to obtain the high quality video.

Specification

The disclosure is objected to because of the following informalities: on line 7 of the claim 19, "are to be blends of" should be "are to be blended from". Moreover on line 7 of the claim 19, "that are to be antialiased" should be "that are antialiased". Appropriate correction is required.

Claim Objections

Claim 19 is objected to because of the following informalities: on line 7 of the claim 19, "are to be blends of" should be "are to be blended from". Moreover on line 7 of the claim 19, "that are to be antialiased" should be "that are antialiased". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-2, 3-11, 12-15, 19 and 21-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

For example, the base claim 1 recites "each full frame", "rendering of full frames", "display of the full frames". However, both applicant's specification and claim have not particularly point out the INPUT image frames to and the OUTPUT image frames from any of the steps for the rendering, interpolating and blending steps. It should be noted that the <u>animated</u> full frames are different from the (original) full frames before animation. However, when the keyword "animated" is omitted from "the animated full frames", the sentence does not make sense at all.

While "rendering of full frames" in the line 2 of the claim 1 refers to rendering the full frames as outputs, i.e., each of the full frames as rendered has a whole number of multiple of a digital video resolution value and a whole number multiple of a temporal resolution value. "Each full frame" in the line 3 of the claim 1 refers to the full frame **as input to** the rendering step because each full frame only has a digital video resolution value **less than** the digital video resolution value of "full frames" (after being rendered) set forth in "rendering of full frames". "Display of the full frames" refers to the full frames as input to the rendering step because these full frames are displayed having a temporal resolution value less than the full frames (after being

rendered) set forth in "rendering of full frames". Moreover, "resizing said full frames" in line 5

of the claim 1 may refer to the full frames as input to the rendering step, which thus is not

described in the specification.

Therefore, these claim limitations set forth in the claim 1 are not described in the

specification in such a way that as to reasonably convey to one of the ordinary skill in art had

possession of the claimed invention.

To comply with the "written description" requirement of 35 U.S.C. 112, first paragraph,

an applicant must convey with reasonable clarity to those skilled in the art that, as of the filling

date sought, he or she was in possession of the invention. The invention is, for purposes of the

"written description" inquiry, whatever is now claimed. Vas-Cath, Inc. v. Mahurkar, 935 F.2d

1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). For purposes of written description,

one shows "possession" by descriptive means such as words, structures, figures, diagrams, and

formulas that fully set forth the claimed invention. Lockwood v. American Airlines, Inc., 107

F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). Such descriptive means cannot be

found in the disclosure for the inventions of the base claim 1.

Claims 3-8 and 12-15 depend upon the claim 1 and are rejected due to their dependency

on the claim 1.

Claim 2 is subject to the same rationale of rejection set forth in the claim 1.

The claims 9-11 depend upon the claim 2 and are rejected due to their dependency on the

claim 2.

The claim 19 is subject to the same rationale of rejection set forth in the claim 1.

The claims 21-29 depend upon the claim 19 and are rejected due to their dependency on

the claim 19.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2, 3-11, 12-15, 19 and 21-29 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention.

For example, the base claim 1 recites "each full frame", "rendering of full frames",

"display of the full frames". However, both applicant's specification and claim have not

particularly point out the INPUT image frames to and the OUTPUT image frames from any of

the steps for the rendering, interpolating and blending.

While "rendering of full frames" in the line 2 of the claim 1 refers to rendering the full

frames as outputs, i.e., each of the full frames as rendered has a whole number of multiple of a

digital video resolution value and a whole number multiple of a temporal resolution value. "Each

full frame" in the line 3 of the claim 1 refers to the full frame as input to the rendering step

because each full frame only has a digital video resolution value **less than** the digital video

resolution value of "full frames" set forth in "rendering of full frames". "Display of the full

frames" refers to the full frames as input to the rendering step because these full frames are

displayed having a temporal resolution value less than the full frames set forth in "rendering of

full frames". Moreover, "resizing said full frames" in line 5 of the claim 1 may refer to the full

frames as input to the rendering step, which thus is not described in the specification. It is

confusing in the claim language whether "full frames", "each full frame", "the full frames", "said

full frames" refer to the INPUT image frame(s) or OUPUT image frame(s). Clarification is

required.

Claims 3-8 and 12-15 depend upon the claim 1 and are rejected due to their dependency

on the claim 1.

Claim 2 is subject to the same rationale of rejection set forth in the claim 1.

The claims 9-11 depend upon the claim 2 and are rejected due to their dependency on the

claim 2.

The claim 19 is subject to the same rationale of rejection set forth in the claim 1.

The claims 21-29 depend upon the claim 19 and are rejected due to their dependency on

the claim 19.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claim 1, 4-7, 15, and 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Demos U.S. Patent No. 5,852,565 (hereinafter Demos-565) in view of Adobe Dynamic

Media Group, "A Digital Video Primer", pp. 1-31; June 2000 as applied to claim 1 above, and

further in view of Demos U.S. Patent No. 6,442,203 (hereinafter Demos-203) and **Adobe After Effects Version 4.1 for Macintosh and Windows (www.adobe.com)**.

The Adobe After Effects are well known to one of the ordinary skill in the computer graphics art. Due to the related copyright law and regulations, the software and/or the book chapters for the Adobe After Effects Version 4.1 as related to the claim invention are not furnished. However, applicants are requested to provide information disclosures on the Adobe After Effects which applicant had employed to come up with the method (claim invention) as the applicant's specification has described. Applicant had used the Adobe After Effects in implementing the method set forth in the applicant's specification.

Claim 1:

ON PAGE 5 of Applicant's specification, it is stated, "the method is advantageous because it is straightforward to implement with commercial software currently available and produces high quality video."

Applicant has used commercial software to come up with the claim invention, at least the specification in Pages 1-5 preceding the above-quoted passage. Because commercial software constitutes the prior art, the commercial software has taught the applicant's claim invention as Applicant admitted of implementing it to arrive at the method (the claimed invention) and thus to obtain the high quality video.

Moreover, this Examiner has found that Adobe After Effects Version 4.1 published in 2000 has taught the claim invention.

Adobe After Effects Version 4.1 teaches "rendering of full frames at a whole number of multiple of a digital video resolution value defining the number of pixels contained in each full frame and at a whole number multiple of a temporal resolution value defining the rate of display of full frames on a computer screen". This function is accomplished with Adobe After Effects Version 4.1 within Composition Settings window by changing the Frame Rate, Frame Size having width and height of the image frames.

Adobe After Effects Version 4.1 teaches "Resizing said full frames to produce a plurality of frames that are antialiased". Applicant's specification and claim does not define the term "antialiased", the broadest interpretation is made. In applicant's specification, the Page 3, line 11-15, antialiased frames are smooth frames. Adobe After Effects Version 4.1 teaches "blur comp" window to produce an animated layer that appears sharp and distinct as it moves through the frame of the composition. To simulate the effect over time by setting key frames, the Motion Blur switch is activated for an animated layer. Adobe After Effects Version 4.1 teaches "Keyframe Interpolation" for providing spatial and temporal interpolation. One can view and control temporal interpolation in a speed, value or velocity path to produce smooth frames. Adobe After Effects Version 4.1 teaches "frame blending" by activating the Frame Blending switch. When Frame Blending is on, After Effects interpolates between original frames, blending them, rather than simply repeating them and thus producing smooth frames without the jerky appearance.

Adobe After Effects Version 4.1 teaches "blending each consecutive frame". Adobe

After Effects Version 4.1 teaches "frame blending" by activating the Frame Blending switch.

When Frame Blending is on, After Effects interpolates between original frames, blending them,

rather than simply repeating them and thus producing smooth frames without the jerky

appearance.

Demos-565 teaches rendering of full frames at a whole number of multiple of a digital

video resolution value defining the number of pixels contained in each frame and at a whole

number multiple of a temporal resolution value defining the rate of display of full frames on a

computer screen (*Fig. 10 of the cited reference wherein a video of resolution 1k by 512 is

converted to 2k by 1k. See Fig. 10 of the cited reference wherein the frame rate 24 fps or 36

fps is converted to 72 fps/Hz; see column 15, lines 18-50 for detailed description*).

Although Demos-565 is silent to the claim limitation of resizing each full frame to

produce a plurality of frames that are antialiased, *Adobe-Dynamics-Media-Group in Page 7 also*

*discloses **spatial compression** such as reducing the size of each video frame in which each input*

video frame is resized, in page 7 and 11, while keeping image quality high and avoiding

compression artifacts. Adobe-Dynamics-Media-Group further discloses scaling each video

*frame to create **smooth key-framed animations of flying video** with controls for such*

*parameters as rotation, **scale and distortion. In regard to a spatial resizing, Applicant admits***

on page 4 of applicant's specification that Adobe's AfterEffects teaches bicubic interpolation

of pixels for each full frame which is related to spatial resizing of a video frame and Adobe-

Dynamics-Media-Group teaches a set of the software such as Adobe AfterEffects, Photoshop

and Premier and thereby teaches spatial resizing of a video frame to reduce the resolution of a

video frame. Additionally, Adobe-Dynamics-Media-Group further discloses in Page 18 cross-

*platform compatibility in which digital clips can be imported or exported in many **different video***

***formats** with different resolutions and rendering the text and graphics at any scale.*

Applicant admits on page 4 of applicant's specification that Adobe's After Effects

teaches bicubic interpolation of pixels for each full frame and Adobe-Dynamics-Media-Group

teaches a set of the software such as Adobe After Effects, Photoshop and Premier.

Although Demos-565 is silent to the claim limitation of blending each consecutive frame,

Adobe-Dynamics-Media-Group teaches in page 12 blending each consecutive frame of a video

stream in which the pixels corresponding to the frames can be spatially or temporally blended by

temporal compression/combination of the inter temporal image frames and spatial

compression/combination of the pixels associated with each consecutive image frame and

blending with text and graphics for each consecutive image frame. Adobe-Dynamics-Media-

Group discloses in page 12 each of I, B and P frames are obtained from a pair of consecutive

frames by averaging the corresponding pixel values of each frame.

It would have been obvious to one of the ordinary skill in the art to have incorporated

Adobe's resizing feature in a software program into Demos-565's computer program because

Demos-565 in Fig. 8 a filter to reduce the resolution of the 2k by 1k original image to 1k by 512

base layer image. Demos-565 also teaches **temporal scaling and resolution scaling** techniques

in column 17, lines 35-67 and column 18, lines 1-12 and column 18, lines 38-57) and therefore

suggests an obvious modification.

One of the ordinary skill in the art would have been motivated to perform <u>temporal</u>

<u>scaling and resolution scaling</u> according to Demos-565's invention (<u>See Demos-565 column 17,</u>

<u>lines 35-67 and column 18, lines 1-12 and column 18, lines 38-57</u>).

Claim 4:

The claim 4 encompasses the same scope of invention as that of the claim 1 except

additional claim limitation of separating each frame into a first and second field, the first field

contains the even lines of a frame and the second field contains the odd lines of a frame.

However, Adobe-Dynamics-Media-Group further discloses the claim limitation of separating

each frame into a first and second field, the first field contains the even lines of a frame and the

second field contains the odd lines of a frame (*e.g., Adobe-Dynamics-Media-Group further*

discloses software for calculating the images for the two set of fields, for each frame of video, in

order to achieve the smoothest motion and thereby separating the even and odd lines of the

picture image by calculating the images for the two set of fields separately for the first 1/60th of a

second and the next 1/60th of a second in the TV screen. Therefore, a television that is displaying

30 frames per second is really displaying 60 fields per second).

Claim 5:

The claim 5 encompasses the same scope of invention as that of the claim 1 except

additional claim limitation of alternately displaying the first and second fields of each frame, the

first field of each frame with the second field of each frame. However, Adobe-Dynamics-Media-

Group further discloses the claim limitation of alternately displaying the first and second fields

of each frame, the first field of each frame with the second field of each frame (*e.g., Adobe-*

Dynamics-Media-Group page 4 calculating the odd and even fields of a picture image and

alternately display the two set of fields for the first 1/60th of a second and the next 1/60th of a

second in the TV screen).

Claim 6:

The claim 6 encompasses the same scope of invention as that of the claim 1 except

additional claim limitation of resizing each full frame to produce antialiased frames is performed

with bicubic interpolation.

However, Adobe-Dynamics-Media-Group further discloses the claim limitation of

resizing each full frame to produce antialiased frames is performed with bicubic interpolation

(*e.g., Applicant admits on page 4 of applicant's specification that Adobe's AfterEffects teaches*

bicubic interpolation of pixels for each full frame and Adobe-Dynamics-Media-Group teaches

a set of the software such as Adobe AfterEffects, Photoshop and Premier).

Claim 7:

The claim 7 encompasses the same scope of invention as that of the claim 1 except

additional claim limitation of each pair of consecutive frames being blending by averaging

corresponding pixel values of each frame.

However, Adobe-Dynamics-Media-Group further discloses the claim limitation of each

pair of consecutive frames being blending by averaging corresponding pixel values of each

frame (*e.g., Adobe-Dynamics-Media-Group further discloses in page 12 each of the I, B and P frames are obtained from a pair of consecutive frames by averaging the corresponding pixel values of each frame*).

Claim 15:

The claim 15 encompasses the same scope of invention as that of the claim 1 except additional claim limitation of the rendering step being implemented using commercial software.

However, Adobe-Dynamics-Media-Group further discloses the commercial software implementing the rendering step (*e.g., Adobe-Dynamics-Media-Group in page 16 discloses the Photoshop software that can be used to perform the rendering step. Adobe-Dynamics-Media-Group in page 4 discloses the separating of two set of fields of a picture image using AfterEffects software. Adobe-Dynamics-Media-Group in page 3 that film displayed at the rate of 24 frames per second*).

Claim 19:

The claim 19 is subject to the same rationale of rejection set forth in the claim 1.

Claim 20:

The claim 20 encompasses the same scope of invention as that of the claim 1. The claim 19 is subject to the same rationale of rejection set forth in the claim 1.

Claim 21:

The claim 21 encompasses the same scope of invention as that of the claim 7. The claim

19 is subject to the same rationale of rejection set forth in the claim 7.

Claim 22:

The claim 22 encompasses the same scope of invention as that of the claim 4. The claim

19 is subject to the same rationale of rejection set forth in the claim 4.

Claim 23:

The claim 23 encompasses the same scope of invention as that of the claim 5. The claim

19 is subject to the same rationale of rejection set forth in the claim 5.

Claim 24:

The claim 24 encompasses the same scope of invention as that of the claim 5. The claim

19 is subject to the same rationale of rejection set forth in the claim 5.

Claim 25:

The claim 22 encompasses the same scope of invention as that of the claim 6. The claim

19 is subject to the same rationale of rejection set forth in the claim 6.

Claim 26:

The claim 22 encompasses the same scope of invention as that of the claim 7. The claim

19 is subject to the same rationale of rejection set forth in the claim 7.

Claims 2, 3, 8-14, and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Demos U.S. Patent No. 5,852,565 (hereinafter Demos-565) in view of Adobe Dynamic

Media Group, "A Digital Video Primer", pp. 1-31; June 2000 as applied to claim 1 above, and

further in view of (hereinafter Demos-203) and **Adobe AfterEffects Version 4.1 for Macintosh**

and Windows (www.adobe.com).

Claim 2:

ON PAGE 5 of Applicant's specification, it is stated, "the method is advantageous

because it is straightforward to implement with commercial software currently available and

produces high quality video."

Applicant has used commercial software to come up with the claim invention, at least the

specification in Pages 1-5 preceding the above-quoted passage. Because commercial software

constitutes the prior art, the commercial software has taught the applicant's claim invention as

Applicant admitted of implementing it to arrive at the method (the claimed invention) and thus to

obtain the high quality video.

Moreover, this Examiner has found that Adobe After Effects Version 4.1 published in

2000 has taught the claim invention.

Adobe After Effects Version 4.1 teaches "rendering of full frames at a whole number of

multiple of a digital video resolution value defining the number of pixels contained in each full

frame and at a whole number multiple of a temporal resolution value defining the rate of display

of full frames on a computer screen". This function is accomplished with Adobe AfterEffects

Version 4.1 within Composition Settings window by changing the Frame Rate, Frame Size

having width and height of the image frames.

Adobe After Effects Version 4.1 teaches "Resizing said full frames to produce a plurality

of frames that are antialiased". Applicant's specification and claim does not define the term

"antialiased", the broadest interpretation is made. In applicant's specification, the Page 3, line

11-15, antialiased frames are smooth frames. Adobe After Effects Version 4.1 teaches "blur

comp" window to produce an animated layer that appears sharp and distinct as it moves through

the frame of the composition. To simulate the effect over time by setting key frames, the Motion

Blur switch is activated for an animated layer. Adobe After Effects Version 4.1 teaches

"Keyframe Interpolation" for providing spatial and temporal interpolation. One can view and

control temporal interpolation in a speed, value or velocity path to produce smooth frames.

Adobe After Effects Version 4.1 teaches "frame blending" by activating the Frame Blending

switch. When Frame Blending is on, After Effects interpolates between original frames, blending

them, rather than simply repeating them and thus producing smooth frames without the jerky

appearance.

Adobe After Effects Version 4.1 teaches "blending each consecutive frame". Adobe

After Effects Version 4.1 teaches "frame blending" by activating the Frame Blending switch.

When Frame Blending is on, After Effects interpolates between original frames, blending them,

rather than simply repeating them and thus producing smooth frames without the jerky

appearance.

Demos-565 and Adobe-Dynamics-Media-Group teach rendering of full frames at a whole

number of multiple of a digital video resolution value defining the number of pixels contained in

each frame and at a whole number multiple of a temporal resolution value defining the rate of

display of full frames on a computer screen (*e.g., Adobe-Dynamics-Media-Group teaches in*

page 4 producing videos in different resolutions and at the frame rates. The original video

frames can be rendered at different resolutions and different temporal resolution rates. For

example, a television that is displaying 30 frames per second for a stream of video frames is

really displaying 60 fields per second and therefore the stream is rendered at 60 frames per

second while the same stream of video frames being displayed on the computer is displayed at 30

frames per second due to the separation of the odd/even fields and alternately displaying the odd

frame and even frame on the computer screen . Adobe-Dynamics-Media-Group further discloses

scaling each video frame to create smooth key-framed animations of flying video which includes

controls for such parameters as rotation, scale and distortion. Adobe-Dynamics-Media-Group

further discloses in Page 20 of a Timeline control for adjusting the frame rate which control how

fast or slow a particular clip will play, i.e., changing the frame rate of a video clip. Therefore,

Adobe-Dynamics-Media-Group teaches full frames are rendered at a multiple of the original

video resolution and at a multiple of a temporal resolution rate).

　　　Resizing a full frame to produce one of a plurality of frames that are antialiased (*e.g.,*

Adobe-Dynamics-Media-Group discloses in Page 4 producing videos in different resolutions and

at different frame rate. Adobe-Dynamics-Media-Group in Page 7 discloses temporal

__compression__ *such as the inter-frame compression in which the whole video stream may be*

resized in terms of the data size, for example, the video is compressed to one-fifth of its original

size (resizing). Adobe-Dynamics-Media-Group in Page 7 also discloses spatial compression

such as reducing the size of each video frame in which each input video frame is resized, in page

7 and 11, while keeping image quality high and avoiding compression artifacts; Adobe-

Dynamics-Media-Group further discloses scaling each video frame to create smooth key-framed animations of flying video which includes controls for such parameters as rotation, scale and distortion. Adobe-Dynamics-Media-Group further discloses in Page 20 of a Timeline control for adjusting the frame rate which control how fast or slow a particular clip will play, i.e., changing the frame rate of a video clip. Finally, in regard to a spatially resizing, Applicant admits on page 4 of applicant's specification that Adobe's AfterEffects teaches bicubic interpolation of pixels for each full frame which is related to spatially resizing of a video frame and Adobe-Dynamics-Media-Group teaches a set of the software such as Adobe AfterEffects, Photoshop and Premier and thereby teaches spatially resizing of a video frame to reduce the resolution of a video frame. Additionally, Adobe-Dynamics-Media-Group further discloses in Page 18 cross-platform compatibility in which digital clips can be imported or exported in many different video formats with different resolutions and rendering the text and graphics at any scale. e.g., Adobe-Dynamics-Media-Group teaches compression which reduces the size of each video frame, in page 7 and 11, while keeping image quality high and avoiding compression artifacts. Moreover, Adobe-Dynamics-Media-Group further discloses scaling each video frame to create smooth key-framed animations of flying video with controls for such parameters as rotation, scale and distortion. Adobe-Dynamics-Media-Group further discloses in Page 20 of a Timeline control for adjusting the frame rate which control how fast or slow a particular clip will play, i.e., changing the frame rate of a video clip);

__Applicant admits on page 4 of applicant's specification that Adobe's AfterEffects teaches bicubic interpolation of pixels for each full frame and Adobe-Dynamics-Media-Group teaches a set of the software such as Adobe AfterEffects, Photoshop and Premier.__

Blending each consecutive frame (*e.g., Adobe-Dynamics-Media-Group teaches in page 12 that pixels corresponding to the frames can be spatially or temporally blended. For example, temporal compression of a video streams requires blending between the image frames.*).

Separating each frame into a first and second field, wherein the first field contains the even lines of a frame and the second field contains the odd lines of a frame (*e.g., Adobe-Dynamics-Media-Group further discloses software for calculating the images for the two set of fields, for each frame of video, in order to achieve the smoothest motion and thereby separating the even and odd lines of the picture image by calculating the images for the two set of fields separately for the first 1/60th of the second and the next 1/60th of a second in the TV screen. Therefore, a television that is displaying 30 frames per second is really displaying 60 fields per second*); and

Alternately displaying the first and second fields of each frame, the first field of each frame with the second field of each frame (*e.g., Adobe-Dynamics-Media-Group page 4 calculating the odd and even fields of a picture image and alternately display the two set of fields for the first 1/60th of a second and the next 1/60th of a second in the TV screen*).

However, Demos-565 and Adobe-Dynamics-Media-Group are silent to Gaussian blurring and thereby is silent to the claim limitation of "Blending the colors and images depicted in pixels that are within a Gaussian blur radius value of a center pixel, wherein the number of pixels blended is proportional to a Gaussian blur radius".

(c) Demos-203 teaches Gaussian blur radius and the claim limitation of "Blending the colors and images depicted in pixels that are within a Gaussian blur radius value of a center pixel, wherein the number of pixels blended is proportional to a Gaussian blur radius" (*e.g.,*

Demos column 22, lines 56-67; column 23, lines 1-25 a Gaussian blur filter with certain radius along the motion vector crossing the set of the frames wherein the a series of Gaussian filters are placed at single pixel steps along the motion vector line and the motion vector line extends plus and minus half its length centered about the new pixel position center. Therefore, Demos teaches the gaussian blurring radius within the Gaussian blur filter).

(d) It would have been obvious to one of ordinary skill in the art to have incorporated the Gaussina blur radius of Demos-203 into Demos-565 and Adobe-Dynamics-Media-Group's software such as AfterEffects because Adobe-Dynamics-Media-Group discloses effects filters and motion blur through Motion Math (Adobe-Dynamics-Media-Group page 21 and 25) and Adobe AfterEffects has the bicubic interpolation filter and motion blur math for spatially or temporally blending of pixels according to the AfterEffects' filters (Adobe-Dynamics-Media-Group page 21 and 25). Therefore Adobe-Dynamics-Media-Group suggests the claim limitation. Moreover, Demos also teaches spatially and temporally compositing of video frames (Demos column 19-22).

(e) One of the ordinary skill in the art would have been motivated to do this because Gaussian blur filter can be incorporated for spatially and temporally compositing of video frames (Demos-203 column 19-23) in Adobe's AfterEffects Software (Adobe-Dynamics-Media-Group page 21 and 25).

Claim 3:

The claim 3 encompasses the same scope of invention as that of the claim 2. The claim 2 is subject to the same rationale of rejection set forth in the claim 2.

Claim 8:

(a) The claim 8 encompasses the same scope of invention as that of the claim 1 except

additional claim limitation of gaussian blurring of a non-zero pixel radius being performed that

blends the colors and images depicted in pixels that are within a gaussian blur radius value of a

center pixel.

(b) The Demos-565 and Adobe-Dynamics-Media-Group disclose all claim limitations set

forth in the claim 1. However, Demos-565 and Adobe-Dynamics-Media-Group are silent to

Gaussian blur radius and thereby is silent to the claim limitation of gaussian blurring of a non-

zero pixel radius being performed that blends the colors and images depicted in pixels that are

within a gaussian blur radius value of a center pixel.

(c) Demos-203 teaches Gaussian blur radius and the claim limitation of gaussian blurring

of a non-zero pixel radius being performed that blends the colors and images depicted in pixels

that are within a gaussian blur radius value of a center pixel (*e.g., Demos-203 column 22, lines*

56-67; column 23, lines 1-25 a Gaussian blur filter with certain radius along the motion vector

crossing the set of the frames wherein the a series of Gaussian filters are placed at single pixel

steps along the motion vector line and the motion vector line extends plus and minus half its

length centered about the new pixel position center. Therefore, Demos-203 teaches the gaussian

blurring radius within the Gaussian blur filter).

(d) It would have been obvious to one of ordinary skill in the art to have incorporated the

Gaussina blur radius of Demos-203 into Demos-565 and Adobe-Dynamics-Media-Group's

software such as AfterEffects because Adobe-Dynamics-Media-Group discloses effects filters

and motion blur through Motion Math (Adobe-Dynamics-Media-Group page 21 and 25) and

Adobe AfterEffects has the bicubic interpolation filter and motion blur math for spatially or

temporally blending of pixels according to the AfterEffects' filters (Adobe-Dynamics-Media-

Group page 21 and 25). Therefore Demos-565 and Adobe-Dynamics-Media-Group suggests the

claim limitation. Moreover, Demos-203 also teaches spatially and temporally compositing of

video frames (Demos-203 column 19-22).

(e) One of the ordinary skill in the art would have been motivated to do this because

Gaussian blur filter can be incorporated for spatially and temporally compositing of video frames

(Demos-203 column 19-23) in Adobe's AfterEffects Software (Adobe-Dynamics-Media-Group

page 21 and 25).

Claim 9:

The claim 9 encompasses the same scope of invention as that of the claim 2 except

additional claim limitation that is identical to the claim 6. The claim 9 is subject to the same

rationale of rejection set forth in the claim 6.

Claim 10:

The claim 10 encompasses the same scope of invention as that of the claim 2 except

additional claim limitation that is identical to the claim 7. The claim 10 is subject to the same

rationale of rejection set forth in the claim 7.

Claims 11-14:

Each of the claims 11-14 encompasses the same scope of invention as that of the claim 2.

The claims 11-14 are subject to the same rationale of rejection set forth in the claim 2 (*e.g.,*

Demos-203 column 22, lines 56-67; column 23, lines 1-25 a Gaussian blur filter with certain

radius along the motion vector crossing the set of the frames wherein the a series of Gaussian

filters are placed at single pixel steps along the motion vector line and the motion vector line

extends plus and minus half its length centered about the new pixel position center. Therefore,

Demos teaches the gaussian blurring radius within the Gaussian blur filter).

Claim 27:

(a) The claim 27 encompasses the same scope of invention as that of the claim 26 except

additional claim limitation of gaussian blurring being performed that blends the colors and

images depicted in pixels that are in proximity to one another in each frame.

(b) The Demos-565 and Adobe-Dynamics-Media-Group disclose all claim limitations set

forth in the claim 1. However, Demos-565 and Adobe-Dynamics-Media-Group are silent to

gaussian blurring being performed that blends the colors and images depicted in pixels that are in

proximity to one another in each frame.

(c) Demos-203 teaches Gaussian blur and the claim limitation of gaussian blurring being

performed that blends the colors and images depicted in pixels that are in proximity to one

another in each frame (*e.g., Demos column 22, lines 56-67; column 23, lines 1-25 a Gaussian*

blur filter with certain radius along the motion vector crossing the set of the frames wherein the

a series of Gaussian filters are placed at single pixel steps along the motion vector line and the

motion vector line extends plus and minus half its length centered about the new pixel position

center. Therefore, Demos teaches the gaussian blurring radius within the Gaussian blur filter).

(d) It would have been obvious to one of ordinary skill in the art to have incorporated the

Gaussina blurring of Demos-203 into Demos-565 and Adobe-Dynamics-Media-Group's

software such as AfterEffects because Adobe-Dynamics-Media-Group discloses effects filters

and motion blur through Motion Math (Adobe-Dynamics-Media-Group page 21 and 25) and

Adobe AfterEffects has the bicubic interpolation filter and motion blur math for spatially or

temporally blending of pixels according to the AfterEffects' filters (Adobe-Dynamics-Media-

Group page 21 and 25). Therefore Adobe-Dynamics-Media-Group suggests the claim limitation.

Moreover, Demos also teaches spatially and temporally compositing of video frames (Demos

column 19-22).

(e) One of the ordinary skill in the art would have been motivated to do this because

Gaussian blur filter can be incorporated for spatially and temporally compositing of video frames

(Demos column 19-23) in Adobe's AfterEffects Software (Adobe-Dynamics-Media-Group page

21 and 25).

Claims 28-29:

Each of the claims 28-29 encompasses the same scope of invention as that of the claim 2.

The claims 28-29 are subject to the same rationale of rejection set forth in the claim 2 (*e.g.*,

Demos-203 column 22, lines 56-67; column 23, lines 1-25 a Gaussian blur filter with certain

radius along the motion vector crossing the set of the frames wherein the a series of Gaussian

filters are placed at single pixel steps along the motion vector line and the motion vector line

extends plus and minus half its length centered about the new pixel position center. Therefore,

Demos teaches the gaussian blurring radius within the Gaussian blur filter).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

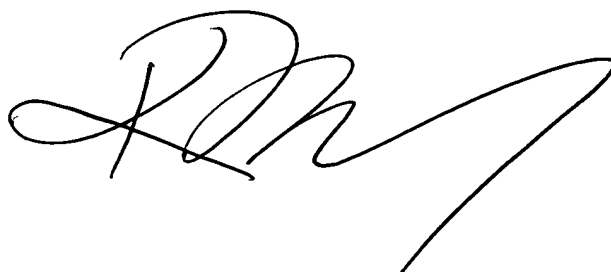Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665.

The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw

KEE M. TUNG
SUPERVISORY PATENT EXAMINER